Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Zenergy Operating Company
Well Name/Number: Amazing Grace 11-2H
Location: SW SE Section 11 T27N R59E
County: Roosevelt **, MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No, 30-40 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick drilling rig, 900 HP-1000HP, to drill a single lateral horizontal Bakken Formation test, 19,536'MD/10,483'TVD.
Possible H2S gas production: Yes, slight.
In/near Class I air quality area: No Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
X Air quality permit (AQB review)
X Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____
Comments: Existing pipeline for H2S gas in the area._____
_____

Water Quality

(possible concerns)
Salt/oil based mud: Yes to oil based invert drilling fluids for intermediate casing hole. Horizontal hole will be drilled with saltwater. Surface casing hole, freshwater, and freshwater mud system to be used.
High water table: No high water table anticipated.
Surface drainage leads to live water: Yes, closest drainage is an unnamed ephemeral tributary drainage to Horse Tied Creek about 1/8 of a mile to the east northeast of this location. Within this drainage is a stock pond, about ¾ of a mile to the north northwest from this location.
Water well contamination: No, closest water well is about 1 1/8 miles to the west northwest from this location in section 10 and is only 77' in depth. This well will be drilled with freshwater and freshwater muds to 2,200' and steel surface casing will be run and cemented to surface to protect groundwater.
Porous/permeable soils: No, silty clay soils.
Class I stream drainage: No, Class I stream drainages.

Mitigation:
X Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
__ Other: _____
Comments: 2,200' surface casing will be drilled with freshwater, steel casing will be run to 2,200' and cemented back to surface. To protect freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: Will utilize existing road crossings of Horse Tied Creek.
High erosion potential: No, location will require a small cut of up to 8.4' and a small fill of up to 9.1', required.
Loss of soil productivity: _ No, location to be restored after drilling, if nonproductive. If productive unused portion of this drillsite will be reclaimed.
Unusually large wellsite: No, large well site 430'X330'
Damage to improvements: Slight surface use appears to be grassland.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
_X Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).
__ Other _____

Comments: Access will be over existing county gravel road and ranch trails. Existing ranch road will need upgrading for heavy trucks. New access road will be built into this location, about 1 mile into this location. Oil based invert drilling fluids will be recycled. Completion fluids will hauled to a commercial Class II disposal. Cuttings and solids will be buried/solidified on site in the lined reserve pit. The pit will be allowed to dry and the pit backfilled. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Residences about 3/4 of a mile to the north and 1 mile to the west from this location. The Town of Bainville, MT about 8 miles to the northwest of this location.
Possibility of H2S: Yes, slight.
Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:
_X Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species: Listed threatened or endangered species are Pallid Sturgeon, Interior Least Tern, Whooping Crane and Piping Plover in Roosevelt County.

Mitigation:
__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other:_____

Comments: Private surface lands. No live water in the immediate area. No concerns.

_____
_____

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites: __None identified.__

Mitigation
__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies)
__ Other: _____
Comments: _Private surface.

_____
_____

Social/Economic

(possible concerns)
__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation
Comments: _No concerns

_____
_____

Remarks or Special Concerns for this site

_Horizontal Bakken exploratory well 19,536'MD/10,483'TVD.
_____

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected, some short term impacts will occur, but can be mitigated.
_____

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC):___/s/Steven Sasaki_____
(title:)_Chief Field Inspector_____
Date:_April 26, 2010_____

Other Persons Contacted:

_____
_Montana Bureau of Mines and Geology, GWIC website _____
(Name and Agency)
__Roosevelt County water wells_____
(subject discussed)
April 26, 2010_____
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Roosevelt County, Montana
(subject discussed)

April 26, 2010

If location was inspected before permit approval:
Inspection date: April 26, 2010
Inspector: Schmidt
Others present during inspection: None